ABSTRACT OF THE DISCLOSURE

A Hebbian synapse emulation circuit models the conductance of a synapse circuit. In one embodiment, the circuit includes a counter that provides control signals determining the conduction states of electrical pathways, which define the conductance level of the synapse. The counter can increment, decrement, or leave the same, the synapse conductance value based upon potentiation and depression signals that are derived from a voltage that corresponds to the calcium concentration in the synapse. The counter can be coupled to a plurality of synapse circuits on a time-shared basis.

mit-046cus patent application